Windows 10 Business Case

2017 July 27

Version 011
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## CHANGE HISTORY

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**DOCUMENT REVIEW & APPROVAL**

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<tr>
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1 Introduction

Guildford Borough Council is beginning a programme of technology modernisation to support transformational business change. A project to refresh the existing desktop hardware (iGel Thin Clients) including a migration to Windows 10 with full cloud capability has been recognised as a key dependency to enable transformation and, most urgently, to manage risk to public service.

1.1 Audience

This document is intended for the ICT Manager at the Guildford Borough Council, as input to the project approval process in Guildford Borough Council, and should be considered sensitive in nature.
2 Objectives

The objective is to conduct a Technical Review of the Guildford Borough council estate and then develop a business case to:

- Support the ITC department in upgrading the desktop estate to a windows 10 platform to provide:
  - A modern, secure and up-to-date operating environment.
  - Always-on access to Council resources.
  - Access to newer Council applications.
  - Access to legacy Council applications.
- Provide the building blocks to enable Guildford Borough Council to align with their “Cloud First” principle.
- Align the Windows 10 project with established ‘Best Practices’.
3 Scope

The scope of this activity is focused on the End User computing services and covers the desktop / laptop hardware, operating system, image / build and the supporting infrastructure (Windows 10 Direct Access infrastructure, legacy application infrastructure) as summarised by Figure 1 - End User Computing services (below).

The scope excludes refreshing other assets including infrastructure (servers, storage etc.), network / communications (routers, switches, cabling, desk phones etc.) or other devices (mobile phones, PDAs, tablets, printers, MFDs etc.).

There is a requirement for some of the existing infrastructure to be remediated to support the delivery of a Windows 10 End User environment.
4 Approach
The approach to creating this business case document included:
- A review of the application estate
- A technical design review
- Business case / planning activities
- Identification of technology dependencies

4.1 Review of the application estate
The review of the application estate included a review of the software application estate to analyse possible risk to application functionality and service offering during a roll out of Windows 10.

4.2 Technical Design Review
The technical design review activities included:
- Review the network architecture to understand risks / constraints
- Review existing virtual desktop architecture designs to understand risks / constraint
- Propose changes to the existing designs of the infrastructure to include a Windows 10 Direct Access server environment, to ensure compatibility with the new client desktop / laptop estate, using Windows 10, virtual / soft phones and access to the virtual desktop legacy applications.
- Review the existing desktop / laptop images including base image for Windows 10.
- Propose changes to the existing desktop / laptop image, to include Windows 10, software to access the virtual desktop legacy applications and for use with the virtual / soft phone solution.
- Review the application suite and identify criticality to the business and risk if not migrated successfully.

4.3 Business Case / Planning
The business case / planning activities included:
- Review documentation provided on other current initiatives and identify key dependencies, constraints with a managed deployment.
- Review any relevant / associated current cost models, business case content, supplier contracts, procurement frameworks and ICT budgets to verify known or likely pricing, costs and potential benefits identified so far. Using the Council’s ICT standard template, to create a business case identifying the expected costs and benefits of proceeding with the infrastructure changed and managed deployment.
- Create relevant project documentation, using the Council’s ICT standard templates, to support the business case and any potential tender to undertake the infrastructure changes and managed deployment.

4.4 Windows 10 dependencies
The Windows 10 dependencies activities including identifying infrastructure remediation activities that must be completed:
- before the project starts
- before the project completes
5 Windows 10 Platform Benefits

Windows 10 is Microsoft's latest desktop operating system providing an enhanced end user experience, increased security options and improved administration and management functionality.

5.1 Benefits of upgrading to Windows 10

The benefits of upgrading to Windows 10 for GBC include:

- Improved IT Security: older operating systems are more vulnerable to attack.
- Improved collaboration: the Windows 10 platform enables deployment of collaboration tools across the council, helping drive up productivity and meet growing customer and user expectations.
- Improved service levels: GBC would benefit from higher levels of service availability, a stable operating system and supported software. We estimate that these changes would result in a 20% reduction in outages.
- Reduced cost of failure: the upgrade will, once bedded in, enable a reduction in the levels of incidents to the IT service desk by over 20%.
- Integration with the cloud: the upgrade provides GBC with the ability to adopt the ‘Cloud first’ principle / approach.
- Reduced risk: the plan eliminates and mitigates many legacy risks to the network and applications in addition to those directly linked to out of date operating systems.
- Reduced future cost: the gap between GBC’s legacy infrastructure and current IT industry standards is increasing the cost of maintenance and change. If maintained within supported levels, this programme would reduce future change costs to IT services.

5.2 Why now?

The GBC IT infrastructure is vulnerable to failure and higher cost of ownership.

Best Practices in PC Life Cycle Services" (Gartner);

“Failure to take a holistic view of EUC life cycle services can lead to inefficiencies, duplication, omissions and, ultimately, unnecessary cost — essentially raising total cost of ownership (TCO)."

By postponing the move to a Windows 10 platform the GBC run the risk of:

- Increased migration costs: The cost to move from the current platform to Windows 10 will continue to increase.
- Service interruptions: Some components in the GBC IT estate are no longer supported and others are end of life leading to higher risk of service interruption.
- Increased system down time: sourcing parts for non-supported and end of life hardware will increase in difficulty, maintaining service and applying change will require higher levels of downtime.
- Increased risk of IT related security breach: legacy systems are no longer supported, patch or upgraded. Legacy systems provide easier targets to be exploited.
Figure 2 - Current state of End User Computing services in section 6.2.4 highlights the end user computing services in need of risk mitigation (amber and red coloured services and dependencies).
6 Summary of data gathered

Summary and background information to the data gathering and analysis conducted for Guildford Borough Council between 12 June and 10 July 2017.

6.1 Application Review

The application review analysed the software application estate to understand possible risks to application functionality and service offering during a roll out of Windows 10.

The review would typically consider data from an HR directory, software asset register and CMDB as well as the procurement and contract systems and data discovery tools. However, this data wasn't available for review. Instead, the review focussed on manual data collection through workshops and engagement with 8 individual members of the IT team and 1 member of the finance team. In addition, data was gathered from meetings with business users and a review of IT service desk tickets. Data was validated with GBC management and cross checked with available sources such as Service Desk ticket history files.

It is difficult to establish if the information gathered is an exhaustive list and whilst it is thought to be very thorough it should be noted that there is a danger that some applications have fallen through the gaps.

The application list has been categorised and ordered based on criticality as defined by the GBC ICT management team.

6.1.1 Summary of Software Application Risks

- Users confirmed - 800
- Locations confirmed - 21
- Home workers / councillors confirmed - 48
- Applications identified as being in use with some associated risk – 73

The categories below have been established to pinpoint the overall risk and impact should the applications fail to run on a Windows 10 desktop environment.

A score was also added to enable grouping of high impact areas.
### Impact Area

<table>
<thead>
<tr>
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<th>IAScore</th>
<th>Impact</th>
<th>IScore</th>
<th>Probability</th>
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<td>High</td>
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#### 6.1.2 Applications with the highest Risk

The highest risk rating for a single application is 55 and the lowest 0.

There are 31 externally developed packages achieving a score of 25 or above that pose a risk, as well as a high number of internally developed access databases, (predominantly used throughout finance to import or export forecasting and budgeting data). These are developed and managed in the main by one person creating a single point of failure risk.

Other Access databases are used by several teams as a purchasing tool. None are linked but hold key historical data and are believed to be a risk.

A summary of high-risk products is shown in the following tables below, however a full list of applications and their risks can be obtained from the Inventory Spreadsheet on the shared project drive.
**Applications with a Major Impact**

These applications have a high probability of failure, as well as affecting a wide number of areas. Lost data will have a severe impact on the business.

<table>
<thead>
<tr>
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<th>Product / System</th>
<th>Probability</th>
<th>P Score</th>
<th>Impact Area</th>
<th>IA Score</th>
<th>Impact</th>
<th>I Score</th>
<th>Total Risk score</th>
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<td>Bacas</td>
<td>Bacas</td>
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<td>25</td>
<td>All AREAS, High Impact</td>
<td>20</td>
<td>Severe</td>
<td>15</td>
<td>60</td>
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<tr>
<td>Advanced Business Solutions</td>
<td>eFinancials eAnalyser</td>
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<td>20</td>
<td>Severe</td>
<td>15</td>
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<tr>
<td>Civica (was IBS)</td>
<td>Open Revenues</td>
<td>High</td>
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<td>20</td>
<td>Severe</td>
<td>15</td>
<td>60</td>
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<td>Civica (was IBS)</td>
<td>Open Revenues</td>
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<td>Hugh Symons</td>
<td>CD View</td>
<td>High</td>
<td>25</td>
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<td>15</td>
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<td>10</td>
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Applications with a Severe Impact
A medium probability of failure but would cause significant impact if they were to do so.

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Applications with a Low probability
Low probability of failure but with a Severe to Heavy Impact if they were to fail.

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<td>Orchard</td>
<td>Orchard</td>
<td>Low</td>
<td>5</td>
<td>All AREAS, High Impact</td>
<td>20</td>
<td>Heavy</td>
<td>10</td>
<td>35</td>
</tr>
<tr>
<td>Selima</td>
<td>Selima HR Payroll</td>
<td>Low</td>
<td>5</td>
<td>Administrative High</td>
<td>15</td>
<td>Severe</td>
<td>15</td>
<td>35</td>
</tr>
<tr>
<td>CCS IT Limited</td>
<td>Keystone</td>
<td>Low</td>
<td>5</td>
<td>All AREAS, High Impact</td>
<td>20</td>
<td>Heavy</td>
<td>10</td>
<td>35</td>
</tr>
<tr>
<td>Data Images</td>
<td>Flexiroute</td>
<td>Low</td>
<td>5</td>
<td>Reputational</td>
<td>15</td>
<td>Heavy</td>
<td>10</td>
<td>30</td>
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<tr>
<td>Treasury Net</td>
<td>Latima</td>
<td>Low</td>
<td>5</td>
<td>Financial</td>
<td>15</td>
<td>Heavy</td>
<td>10</td>
<td>30</td>
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<tr>
<td>TMI Systems Limited</td>
<td>Cloud collaboration</td>
<td>Low</td>
<td>5</td>
<td>Administrative High</td>
<td>15</td>
<td>Heavy</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>Hershey Systems</td>
<td>File360</td>
<td>Low</td>
<td>5</td>
<td>Administrative Medium</td>
<td>10</td>
<td>Heavy</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>Internal Development</td>
<td>Property Asset Database</td>
<td>Low</td>
<td>5</td>
<td>Administrative Medium</td>
<td>10</td>
<td>Heavy</td>
<td>10</td>
<td>25</td>
</tr>
</tbody>
</table>
6.2 Infrastructure Review

The following architecture principles were used when reviewing the end user computing environment infrastructure:

- User focused to deliver easy to use, efficient EUC.
- ‘Cloud first’ government objective.
- Re-use when and where possible.
- Buy first, build second.
- Good enough is enough.
- Enable computer systems to be as up to date possible (some applications cannot be upgraded).

6.2.1 Facilities and hardware

The infrastructure review identified the following facilities and hardware issues:

- Server rooms require extensive remediation to hold server infrastructure.
- Replacement of end-of-support (EOS) & introduction of VoIP system (Mitel) required by December 2017.
- Storage hardware EOS (unsupportable by vendor).
- Some server hardware EOS (unsupportable by vendor).
- Network hardware obsolete and EOS (unsupported by vendor).

6.2.2 Key infrastructure services

The infrastructure review identified the following key infrastructure services issues:

- No current Active Directory health check / state of Active Directory unknown, assumed “not good”.
- Active Directory forest and domain levels old and prevent schema extensions or the deployment of new / upgraded software (including infrastructure services).
- Exchange 2010 unpatched (high security risk), SP3 extended support until 14/1/2020 (SP2 and below already EOS).
- Office 2010 extended support until 13/10/2020 (SP2 required for support).
- SharePoint 2007 EOS on 10/10/2017 (SP3 only, SP2 and below already EOS).
- Citrix VDI-in-a-box EOS (upgrade to XenApp / XenDesktop required).
- No enterprise management toolset to manage client estate (e.g. SCCM).

6.2.3 Application estate

The infrastructure review identified the following application estate issues:

- Legacy 16/32-bit applications and applications incompatible with Windows 7 / Windows 10.
- Microsoft Access 2010 databases-based applications (should be supported by Access 2016).
- Unknown support of several applications.
- Applications require Java and Active-X controls support.
6.2.4 Current EUC view of the Estate

Figure 2 - Current state of End User Computing services summarises the services needed to deliver End User Computing as well as the dependencies for these services.

Services in the diagram are categorised as:
- Green services are ready or require little remediation to roll out Windows 10 and deliver an optimised service;
- Amber services require remediation or improvements in order to provide a fully managed Windows 10 desktop;
- Red services require urgent remediation or replacement before introducing Windows 10.

6.2.5 Remediation Approaches

Options were identified to deliver the Window 10 Upgrade that were compared to a ‘do nothing’ option. The recommended approach was developed through discussion with the project sponsor.

Option 1 - Do nothing

This option leaves GBC exposed to the continued risk of IT security breaches, higher incident volumes and higher ongoing cost of ownership:
- Lowest short-term cost option but not a viable long term option.
- Continued poor user experience resulting from inability to manage new laptop / desktop estate.
- Increasing number of outages from unsupported / EOL hardware failures.
- Increasing information security risks from EOL infrastructure and applications.
Option 2 - RemEDIATE EXISTING SERVICES WITH UPGRADES ONLY WHERE NECESSARY

This option would lead to higher overall costs and higher disruption to user services. Risks of failure would continue with services that had not been remediated:

- Higher longer-term cost.
- High complexity implementation with disruptions to end-user functionality.
- Simpler to manage co-existence between old and new services.
- More effort required to prepare for upgrades and new services.
- Legacy applications prevent upgrade of infrastructure (e.g. Windows XP Active Directory support).
- Phased programme to deliver new services alongside existing services and migrate:
  - Lowest risk approach enabling a simpler and faster implementation of upgraded and new services.
  - More complex co-existence between legacy and new services.
  - Requires migration of all services to retire old infrastructure.
  - Windows XP and 16/32-bit applications may require the retention of the legacy infrastructure.
  - Costs & risks inherent to the coexistence / side-by-side running of legacy and new infrastructures.

Option 3 - INTRODUCE WINDOWS 10 WHILE TRANSFORMING EUC

Minimum remediation to introduce small numbers of Windows 10 devices as an interim measure until a phased programme delivers new Windows 10-optimised services:

- Enables the immediate introduction of Windows 10 with reduced functionality.
- Lower risk approach than options 1 and 2.
- Delivers upgraded and new services over a longer timeframe.
- More complex co-existence between legacy and new services.
- Requires migration of all services in order to retire old infrastructure.
- Requires upgrade / re-build of deployed Windows 10 devices when new services are delivered.
- Windows XP and 16/32-bit applications may require the retention of the legacy infrastructure.
- Dependent on Network and Data Centre upgrades.
- Requires an update to the legacy Active Directory domain.
- Costs of deploying services and devices twice.
- Costs & risks inherent to the coexistence / side-by-side running of legacy and new infrastructures.
- 3 phases
  - Phase 1: Minimum remediation to introduce Windows 10.
  - Phase 2: Deploy new services or remediate legacy EUC services to “good enough” state.
  - Phase 3: Move to hybrid / cloud DC.

Option 4 - NEW SERVICES ALONGSIDE EXISTING EUC SERVICES

Phased programme to deliver new services alongside existing services and migrate:

- Simpler and faster implementation of upgraded and new services is the lowest risk approach
• Delays the introduction of Windows 10 until new core EUC services can be deployed
• Co-existence between legacy and new services will need to be managed
• Requires migration of all services in order to retire old infrastructure
• Windows XP and 16/32-bit applications may require the retention of the legacy infrastructure
• Costs & risks inherent to the coexistence/side-by-side running of 2 infrastructures
• Dependent on Network and Data Centre upgrades
• Requires an update to the legacy Active Directory domain
• Delivers mature technologies as well as best-practice architecture and implementation
• Highest ROI option
• 3 phases
  o Phase 1: Build essential new infrastructure services to deploy Windows 10.
  o Phase 2: Add Windows 10 management infrastructure and move to “transparent” Office 365 services.
  o Phase 3: Cloud first: move to hybrid/cloud DC.
7 Recommended Solution

Option 4 has been identified as the most suitable approach to deliver the Windows 10 upgrade for Guildford Borough Council.

7.1 Gartner IT Infrastructure and Operations Maturity Model

The Gartner IT Infrastructure and Operations Maturity Model provides guidance on improving the services offered by an IT department. The model focuses on improvement across 4 distinct areas across 6 levels.

The areas include:
- People
- Process
- Technology
- Business Management

This business case focuses on Technology aspect of the Model.

7.1.1 Maturity Levels

- **Level 0, Survival** — Little to no focus on IT infrastructure and operations.
- **Level 1, Awareness** — Realisation that infrastructure and operations are critical to the business; beginning to take actions (in people/organisation, process and technologies) to gain operational control and visibility.
- **Level 2, Committed** — Moving to a managed environment, for example, for day-to-day IT support processes and improved success to become more customer-centric and increase customer satisfaction.
- **Level 3, Proactive** — Gaining efficiencies and service quality through standardisation, policy development, governance structures and implementation of proactive, cross-departmental processes, such as change and release management.
- **Level 4, Service-Aligned** — Managing IT like a business; customer-focused; proven, competitive and trusted IT service provider.
- **Level 5, Business Partnership** — Trusted partner to the business for increasing the value of business processes as well as the business as a whole.
7.1.2 Maturity Model mapped to approach

Figure 3 - Mapping of the proposed phased approach to the Gartner Maturity Model (below) shows how the proposed phased approach maps to the Gartner Maturity Model.

The remediation of existing infrastructure services and the introduction of the Windows 10 platform will improve the overall level of maturity for the IT department and the services that are delivered.
7.2 High-level project plan

The following high-level project plan shows the indicative time scale to complete the delivery of Phases 1, 2 and 3. Phase 0 will need to be completed before the project starts.

As work progresses the risk profile will improve. The table below sets out the expected risk profile changes as the phases are implemented.

<table>
<thead>
<tr>
<th>Risk Area</th>
<th>Phase 0</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remote Access</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>File</td>
<td></td>
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</tr>
<tr>
<td>Print</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application Management</td>
<td></td>
<td></td>
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<tr>
<td>Collaboration</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Messaging</td>
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<td></td>
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</tr>
<tr>
<td>Business Applications</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Office Productivity Suite</td>
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<td></td>
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<tr>
<td>Calendar</td>
<td></td>
<td></td>
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<tr>
<td>Contact Management</td>
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<tr>
<td>VOIP / Softphones</td>
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<td></td>
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<tr>
<td>Instant Messaging</td>
<td></td>
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<tr>
<td>Online Meetings</td>
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<td></td>
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</tr>
<tr>
<td>Security services</td>
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<td></td>
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</tr>
<tr>
<td>Group Policy</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Active Directory</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enterprise System</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Image Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application Desktop</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Virtualisation</td>
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<td></td>
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<tr>
<td>Client Hardware Management</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Mobility Management</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Devices (laptop/desktop)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smartphones</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Server Hardware</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAN/WLAN</td>
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<td></td>
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</tr>
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<td>WAN</td>
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<tr>
<td>Data Centre</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There is a requirement to deliver this program of work in line with an ongoing training program to support the end users in transitioning to the Windows 10 platform.
7.3 Phase 0 – Prerequisites and Dependencies

As noted in section 6.2.4, delivery of a Windows 10 service requires the remediation or replacement of several services that the End User Computing services depend on:
- Server room design, approval and implementation;
- New data centre approval and procurement;
- LAN design, approval and implementation;
- WLAN design, approval and implementation;
- WAN design, approval and implementation;
- Cloud platform design, approval and implementation.

It is estimated that the above activities will take approximately 5 months of elapsed time to completion although Windows 10 design activities could start as soon as the designs are finalised for the activities above.

7.3.1 Phase 0 – View of the estate

*Figure 4 - Current state of End User Computing services*
7.4 Phase 1 – Essential Infrastructure Only

7.4.1 Activities

- Creates the essential services of a new Windows 10 infrastructure alongside the legacy Windows XP / Windows 7.
- Enables the controlled introduction of Windows 10
- Provides a stable foundation to deploy automation and additional Windows infrastructure management tools.
- Creates an Active Directory infrastructure that can be synchronised with Azure AD later
- Enables the delivery of the new Unified Communications tools and the migration from the legacy telephone system
- Phase 1 delivers:
  - Active Directory servers providing a new Active Directory forest & domain.
  - Update of the legacy domain's forest and domain functional levels.
  - Establish a 2-way trust between the legacy domain and the new domain.
  - Create DHCP servers for the remediated LAN/WLAN.
  - SCCM to manage client devices and servers members of the new domain.
  - Windows 10 image.
  - Streamlined Group Policies.
  - Direct Access.
  - BitLocker administration tool.

7.4.2 Milestones

Phase 1 activities will be tracked using the following project milestones:

- Designs complete and approved.
- Active directory ready.
- EUC infrastructure ready.
- Security infrastructure ready.
- SCCM Ready.
- Windows 10 image ready.
- VDI platform ready.
- Remote Access ready.
- Service Management complete.

It is estimated that Phase 1 will take 4 months of elapsed time to complete.
7.4.3 Phase 1 – View of the estate

Figure 5 - EUC services state at the end of Phase 1

7.5 Phase 2 - Improved management & Office 365

7.5.1 Activities
- Extends the new infrastructure to deliver build automation
- Implements “transparent” Office365 services: Exchange Online, SharePoint Online
- Phase 2 delivers:
  - SCCM Operating System Delivery (OSD) and Microsoft Deployment Toolkit (MDT) to provide build automation.
  - Modular Windows 10 image.
  - Exchange Online (part of Office365).
  - SharePoint Online (part of Office365).
  - Microsoft App-V.

7.5.2 Milestones
Phase 2 activities will be tracked using the following project milestones:
- Designs complete and approved.
- Office 365 tenant ready.
- Exchange Online ready.
- Exchange Online migration complete.
- SharePoint Online ready.
- SharePoint Online migration complete.
- App-V ready.
- SCCM OSD ready.
It is estimated that Phase 2 will take 5 months of elapsed time to complete.

7.5.3 Phase 2 - View of the estate

7.6 Phase 3 Optimise and Cloud – addresses the app risks

7.6.1 Activities

- Delivers Cloud First government strategy by migrating to a hybrid / cloud first infrastructure.
- Migration of applications to the cloud where.
- Migration to Microsoft OneDrive.
- Best practice application management (fully packaged or sequenced application estate).

7.6.2 Milestones

Phase 3 activities will be tracked using the following project milestones:

- Designs completed and approved.
- Application sequencing complete.
- Application packaging complete.
- Cloud migration complete.

It is estimated that Phase 3 will take approx. 3 months of elapsed time to complete.
7.6.3 Phase 3 – View of the estate

Figure 7 - EUC services state at the end of Phase 3
8 Costs

8.1 Implementation

<table>
<thead>
<tr>
<th>Resource</th>
<th>Days</th>
<th>Day rate</th>
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</thead>
<tbody>
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<td>900</td>
<td>81,000</td>
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<tr>
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</tr>
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<td>60,000</td>
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<td>800</td>
<td>64,000</td>
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<tr>
<td>SharePoint Architect</td>
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<td>24,000</td>
</tr>
<tr>
<td>Exchange Architect</td>
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<td>800</td>
<td>16,000</td>
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<tr>
<td><strong>Sub-total</strong></td>
<td><strong>880</strong></td>
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<td><strong>646,000</strong></td>
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<tr>
<td>Guildford BC</td>
<td>260</td>
<td>300*</td>
<td>78,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1140</strong></td>
<td></td>
<td><strong>724,000</strong></td>
</tr>
</tbody>
</table>

*A rate of £300 has been used for GBC ITC resources and this reflects a fully loaded cost.

8.2 Infrastructure Costs

This project will have an associated infrastructure cost, that is required to address issues around the core network, storage and ageing laptop estate.

An estimated cost £150k should be provisioned to allow for storage and network equipment replacement. It must be noted the actual cost will depend on the final architecture design.

The cost of replacement of 500 laptops is estimated at £500 per laptop and a total cost therefore of £250k. This cost includes the build costs for the laptops.

8.3 Legal and Procurement support costs

To accelerate the purchase of equipment and engagement of resources it will be necessary to obtain legal and procurement support. A provision of £10k for
procurement support (estimating 20 days at £500 per day) has been included in the costs. Legal costs are estimated at a total of £15k for the support of this programme.

### 8.4 Total estimated cost

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation effort (excluding internal resource)</td>
<td>646,000</td>
</tr>
<tr>
<td>Infrastructure storage and network remediation costs</td>
<td>150,000</td>
</tr>
<tr>
<td>Laptop replacement costs</td>
<td>250,000</td>
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<tr>
<td>Legal support</td>
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</tr>
<tr>
<td>Procurement support</td>
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</tr>
<tr>
<td>Internal Costs</td>
<td>78,000</td>
</tr>
<tr>
<td>Contingency</td>
<td>100,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,249,000</strong></td>
</tr>
</tbody>
</table>
9 Risks and Issues

The phased approach has been designed to manage the overall risk exposure to the Guildford Borough Council of delivering the programme. There are several Items that have been highlighted as key risks that will need to be managed through the delivery:

- The WAN shows as amber during phases 1, 2 and 3. Currently there is a single gateway/carrier into the GBC estate. If a second site is not identified for WAN entry into GBC the RAG will turn Red.
- An ongoing program of training will need to run in parallel with this project to ensure a smooth transition between current working practices and the new Windows 10 platform.
- Data Centre and Server Rooms – Minimal changes can be made to the existing DC rooms or major refurbishment will be required to meet existing building regulations. As the authorising body, GBC must be compliant with building regulations.
- A second Data Centre site must be identified to provide resilience and this must be available by the completion of phase 2 otherwise the data centre risk area will return to red.

There is a risk that if the infrastructure and application suite is not maintained and refreshed regularly that this programme will provide temporary risk mitigation. Our recommendation is that GBC takes the opportunity you review refresh and maintenance policies whilst this programme is underway.
10 Appendix A – Summary of Application Research

10.1 Summary of research

Data exports reviewed - 7
Lines of data provided - 18,313
Records established of use, reviewed - 2361
The data collected has been through 4 reviews to achieve its risk rating

10.2 Key Contributors

- Daren Spice - Portfolio Manager
- Peter Barnes - Customer Tech Support Manager
- Andrew McPhee – Second Line engineer
- Nic Niculae – First Line Engineer
- Rob Spiers - GIS Lead
- Damion Freitas - Service Desk Team Leader
- Steve Heather – Finance Systems Manager
- Steve Worsfold - Second Line Engineer

10.3 Data reviewed was obtained from the following sources

N.B. All original documents provided and are stored in the shared drive of Daren Spice. Data used for analysis was taken as a copy and placed in my inventory spreadsheet for analysis, this too is Daren’s drive.

a. **Active Directory export** (832 records) with the following fields
   - Account Name
   - Service Unit
   - Department
   - Location
   - Post code

b. **HR Export / Profile Data** (800 records)
   - Name
   - Location
   - Service Unit
   - Job Role

c. **List of council offices from IT Mapping Database** (20 records)

d. **Excel list of known software suppliers/products in use** (48 records)
   - System
   - Supplier
   - Purpose
   - Service Unit
   - Contact
   - Notes
1. User information, including Business Unit and Job Role, listed in the Active Directory and the HR system were mapped to achieve a cleansed list of 793 active users. Approx.100 of these users did not map directly so some manual cleansing had to be performed. There are approximately 30 remaining names that are in one system and not the other that were not able to be mapped.

2. Locations from all data sources were slightly different and these were cross referenced to obtain a total of 21 sites, plus 48 home workers/councillors which was categorised as various. (*1 location, The Electric Theatre Company, was closed and leased out during the project*).

3. A spreadsheet named Inventory was created and added several worksheets, as follows and this has become the key document for logging all analysed data.

- 3.1 Lists, containing Location, Service Unit, Impact Area, Impact and Probability
- 3.2 Mapped HR & AD User location
- 3.3 Un-mapped HR & AD User location
- 3.4 SW & Vendor list to review, containing the following fields

<table>
<thead>
<tr>
<th>Supplier</th>
<th>Product / System</th>
<th>Contact / Administrator</th>
<th>Service unit/ team</th>
<th>Purpose</th>
<th>Notes</th>
<th>How accessed (First Draft)</th>
<th>How Hosted (First Draft)</th>
<th>Key product (First Draft)</th>
<th>Public affecting (First draft)</th>
<th>No of users (First Draft)</th>
<th>Possible issues noted (First draft)</th>
<th>Impact Area (First draft)</th>
<th>IA Score</th>
<th>Impact (First draft) Based on number of people and systems impacted</th>
<th>I Score</th>
<th>Probability (First Draft) Based on likely hood</th>
<th>P Score</th>
<th>Total Risk score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response from Owner / Supplier</td>
<td>Source Ref</td>
<td>Call ID if Applicable</td>
<td>Useful dates</td>
<td>User ID</td>
<td>Service Section</td>
<td>Job Title</td>
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</tbody>
</table>
4. To this document the 48 known software suppliers were added.

5. Call centre (ticketing system) analysed information added as a point of cross reference to see if tickets were being assigned to any software or application not picked up in the inventory.

5.1 A review of all calls recorded as “Call Type Software” was conducted this totalled 661 calls from 2015 to current date. These were manually reviewed and any call thought to relate to software application was extracted. This resulted in 76 extra software applications being marked for an initial review. *(NB, it must be stressed that this was a complete manual review of user input text fields as there is no category below software.)*

5.2 Calls recorded as ‘Type’ other than software were reviewed to catch any incorrectly categorised calls.

6. Four (4) reviews of the software application data were conducted.

7. System Administrators were questioned and responses collected.

8. Finance Administration were questioned to help understand the amount and dependency on the use of Access databases.

9. Whilst the IT Purchase System Export was initially thought to be a useable source of information, the administrator of the system is not overly familiar with writing queries within access and assistance was required. Unfortunately, the database does not contain manufacturer or product fields so the only information contained in the 11,160 lines of orders is supplier and not directly linked to a software product or version.

10. A workshop was held on the 6th July and retired products were cleansed from the inventory.

11. Criteria around Probability, Impact and Impact area were scored to provide the risk view.
11 Appendix B - Windows 10 image recommendations

11.1 Principles

- Lean core image that can be pre-staged by hardware vendor
- Keep applications out of the image if possible and deliver through SCCM / Active Directory
- Deliver applications through App-V our XenApp if possible
- Build from SCCM / OSD / MDT

11.2 Core image

- Operating System
- Drivers
- SCCM agent
- App-V
- Anti-virus and security software clients (if needed)